

project WEB

winter
2003

Connecting Projects WILD, WET and Learning Tree in New Hampshire

Cuddle Up With A Good (Environmental) Book

With blustery cold weather howling outside, I like nothing better than to curl up with a good book with my son and daughter by my side. We could spend hours poring over enchanting tales of Indian braves and whales, truffula trees and water journeys, and woodland creatures and kapok trees. Our favorite stories can carry us to far off places across the globe and also help us learn more about the things right in our own backyard.

Children's nonfiction literature is rich with environmentally-focused stories that convey scientific concepts and inspire us to care for our natural

surroundings and all living creatures. The powerful descriptions, lovable characters, and fabulous illustrations found in children's environmental literature lend a depth and intimacy to the natural world that no news story could match.

This issue of Project WEB offers suggestions for ways to incorporate environmentally-focused nonfiction into your classroom. In lieu of our usual feature articles, we've opted to include short reviews of our favorite children's environmental literature as well as some of the classics! We hope you and your class will take the time to cozy up with a good environmental book this winter. **WEB**



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There is more treasure in books than in all the pirate's loot on Treasure Island . . . and best of all, you can enjoy these riches every day of your life.

—Walt Disney

Aa

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This child's artwork was created in Marcia Congdon's Milford Elementary School art class and was inspired by listening to "Whale Trilogy," a musical composition about a true whale rescue. To find out more, see this issue's Project HOME on page 7, "A Symphony of Whales: A Literary Model for an Integrated Unit."



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Fish and Game
Department

A N.H. Teacher's Mission to Link Literature, the Land, and Her Students

By Emma Wood Rous

Stories about nature confirm our love for homelands and transport us to new landscapes. Because good writing can engage our emotions and challenge our values, literature is a logical way to affect students' environmental awareness. And yet the NORTH AMERICAN ASSOCIATION OF ENVIRONMENTAL EDUCATION reports that, at the secondary level, environmental education is still rarely found outside of science classes. It's time that changed.

In 1983, I started a half-year environmental literature course for heterogeneously grouped 10-12 graders at OYSTER RIVER HIGH SCHOOL in Durham, N.H. Students in the course write land journals, take field trips, do action projects, and read fiction, nonfiction and poetry with environmental themes. We read Annie Dillard to sharpen our powers of observation and Barry Lopez and Wendell Berry to strengthen our sense of place. Early journals by Capt. John Smith, George Percy and Samuel Sewall show us the natural bounty of pre-colonial America; Thoreau and Muir rally us to save what is left. John McPhee and Joe McGinniss reveal the vast wilderness of Alaska and the commercial interests that threaten it. We walk the red rock country of the desert southwest with Edward Abbey, mourn the loss of Glen Canyon, and envision national parks without crowding and cars. In Barbara Kingsolver's *Animal Dreams*,



© EMMA WOOD ROUS PHOTO

Field trips such as this one to Carter Ridge, helped these Oyster River High School literature students to better appreciate and internalize the great works they were studying.

we learn what attachment to a place means to someone who left and those who stayed, and see a community work to restore the health of their river. Aldo Leopold teaches us the "land ethic" for sustainable use of resources; Rachel Carson alerts us to the dangers of pesticides. As naturalists and great writers, these authors help students appreciate the richness of the earth and inspire them to protect it.

Literature and the Land, Reading and Writing for Environmental Literacy, 7-12 (Heinemann, 2000) describes

these readings and more, activities associated with the reading, trips, projects and writing options. Students engage with issues such as wolf reintroduction, energy consumption, "How much is enough?" and "Can we live in nature without changing or harming it?" By the end of the course, they know a range of perspectives toward nature and have clarified their own. One student writes, "We must... change our perspective and create a reality in which we can respect the earth." ●WEB

Activities Related to Articles in This Issue

Project WET suggests:

Students conduct their own *Adventures in Density* investigations and relate their discoveries to literary adventures described in *The Iceberg Hermit* (Arthur Roth), *The Adventures of Huckleberry Finn* (Mark Twain) and *The Old Man and the Sea* (Ernest Hemingway).

Through literature study, research and writing, students gain a greater understanding of the effects of drought, flood and other water-related events on people in *Dust Bowls and Failed Levees*.

While learning about the conditions that produce condensation in *Poetic Precipitation*, students create poems that express thoughts and feelings about rain. Various weather poems are recommended.

Project Learning Tree suggests:

In the Good Old Days explores how some famous literary writers have played a role in changing public perceptions of environmental problems throughout history.

Through discussion and analysis of the classic fables *The Lorax* by Dr. Suess and *The Man Who Planted Trees* by Jean Giono, students examine the importance of conserving natural resources in *Trees For Many Reasons*.

The Forest of S.T. Shrew is a short story that gives students a "shrew's eye view" of life in the woods, helping them to become familiar with the variety of habitats that can be found within forests.

Project WILD suggests:

And the Wolf Wore Shoes spells out the differences between real and imaginary animals and their characteristics in children's books.

Students create journals in *Wild Words*, then compare their entries to journals of naturalists they researched.

In *Stormy Weather*, students go on a simulated field trip and experience a storm from the viewpoint of an imagined animal.

Teaching Science When Your Principal Says, "Teach Language Arts."

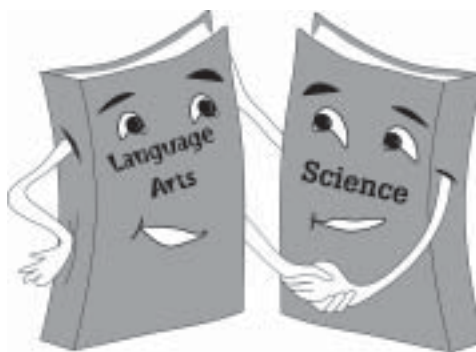
(highlights of an article by Valarie L. Akerson, printed in *Science and Children*, April, 2001)

Many elementary school teachers are torn about which disciplines to emphasize in their teaching. They are told by their principals to focus on mathematics and language arts because those subject areas are being tested. Yet, many teachers recognize that teaching science is also important and realize that at some point in the near future, it will also become a tested subject. They don't want their students to fall behind and have to play "catch-up" later. So, what's a teacher to do? Valarie Akerson, an assistant professor of elementary science education, advocates using interdisciplinary instruction to address the dilemma. Akerson and others claim that learning science and language is a similar process, from questioning and setting a purpose to analyzing and drawing conclusions, and finally, communicating results. Secondly, elementary students need to read, write and communicate about something; why not science?

Connecting language arts to science makes sense because many elementary teachers' strengths are in language arts. Additionally, there are similarities in national reform goals for both science and language arts. Use of language arts to promote literacy and support learning in other content areas is recommended and encouraged by the INTERNATIONAL READING ASSOCIATION, the NATIONAL COUNCIL OF TEACHERS OF ENGLISH, and our own N.H. CURRICULUM FRAMEWORKS. Also, recent reforms in science education recommend that students communicate ideas through written and oral interactions, which are applications of language arts.

Many teachers are not sure how to incorporate the teaching of science with language arts. First, Akerman suggests the development of meaningful themes that promote discussion of big ideas and offer the likelihood science objectives can be met. She cites the example that common themes from the NATIONAL BENCHMARKS FOR SCIENCE LITERACY

(AAAS 1993), such as systems, models, constancy and change or scale enable the exploration of a wide variety of science concepts. Language arts skills can be incorporated in the same way as in the study of other, less scientific themes. Broad themes are constant over time; they broaden students' understanding of the world, are interdisciplinary, relate to the genuine interests of the students and lead to student science inquiry.



Additionally, class discussions and written work naturally help teachers identify children's ideas and misconceptions about science topics when introducing a new theme or unit of study. The K-W-L technique, where students discuss what they *know*, *want to know* and *learned* about a subject, lends itself nicely to this purpose. Another possibility is regular science journaling, where students record their observations and analysis of scientific exploration. With this method, teachers can track the development of student ideas from misconceptions to better understandings. An added bonus is that the questions asked by students in their journals can be used by the teacher to plan future instruction.

By taking an interdisciplinary approach with science and language arts, teachers can help students meet both literacy and science objectives with the same activities. ●WEB

Calendar

March 12 – N.H. ENVIRONMENTAL EDUCATORS Annual Meeting, N.H. FISH AND GAME, Concord. For more information, visit www.neeea.org/nh.

March 25 – NHSTA Spring Conference, PHILLIPS EXETER ACADEMY. For more information, visit www.nhsta.net.

April 26 – Discover WILD N.H. Day at N.H. FISH AND GAME, Concord. For more information, visit www.wildlife.state.nh.us.

May 3 – *Walk in the Forest* Teacher Workshops in Keene and Epping. For more information, contact Jess at 1-800-677-1499 or jess@nhplt.org.

May 7 – N.H. Drinking Water Week Festival (for 4th grade students and their teachers), Stratham Fairgrounds. For more information, contact Nicole at 271-4071 or nclegg@des.state.nh.us.

May 10 – *Walk in the Forest* Teacher Workshops in Gilmanton Iron Works and Sunapee. For more information, contact Jess at 1-800-677-1499 or jess@nhplt.org.

May 17 – *Walk in the Forest* Teacher Workshops in Bethlehem. For more information, contact Jess at 1-800-677-1499 or jess@nhplt.org.

June 3-7 - 5th Biennial Conference of the ASSOCIATION FOR THE STUDY OF LITERATURE AND THE ENVIRONMENT at Boston University. For more information, visit www.asle.umn.edu

Classic Environmentally-Focused Literature Appropriate for Students

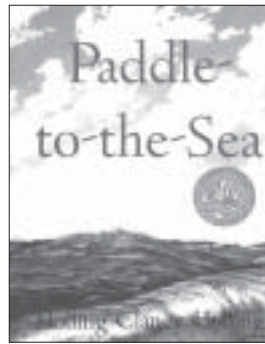


***A Sand County Almanac* by Aldo Leopold**

First published in 1949, this book is a timeless classic. The author offers month-by-month accounts of the changing faces of his own farm. From “Smoky Gold” October to “The Geese Return(ing)” in March to August’s “Green Pasture,” these personal odes to seasonal events offer an unparalleled understanding of the ways of nature through a great conservationist’s eyes.

***The Lorax* by Dr. Seuss**

In his usual fun and flowing style Dr. Seuss tells a remarkable story of supply, demand and profit that lead to the ultimate destruction of the environment when industry is left to run unchecked. Imaginary truffula trees, highly prized for their bright-colored tufts, are cut to extinction to make knitted thneeds that everyone seems to need. The effect on the environment - and all that live in it - is devastating.



***Paddle-to-the-Sea* by Holling C. Holling**

This story begins with a young Native American boy who dreams of traveling the waterways of the Great Lakes region to reach the Atlantic Ocean. Instead of setting sail himself, the boy carves a wooden canoe complete with Indian brave pilot (which he names Paddle-to-the-Sea) and sets it on its way downstream.

After four years of travel, during which he meets many intriguing animals and people (each of whom imparts a lesson about the places through which the little canoe travels), Paddle finally reaches the ocean after imparting a fabulous watershed and geography lesson to readers.

***The Man Who Planted Trees* by Jean Giono, illustrated with wood engravings by Michael McCurdy**

This inspiring story follows the life of Elzeard Bouffier, a man who single-handedly plants 100 acorns each day for years on end, transforming a desolate portion of Provence, France into a forested valley full of life and joy. This book offers a tribute to one person’s ability to make a difference.



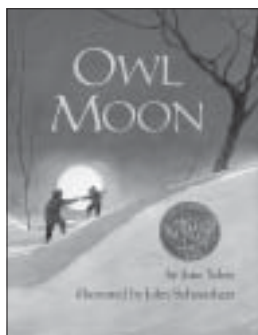
***The Giving Tree* by Shel Silverstein**

Author Shel Silverstein leaves his intentions for the meaning of this ever-popular tale open to interpretation. From the simple words and sketches, readers learn life lessons about true friendship and conserving natural resources. With each reading, new meanings are uncovered.

Our Favorite Environmentally-Focused Literature

Owl Moon by Jane Yolen, illustrated by John Schoenherr

This story tells of a young girl who bundles up late on a moonlit, winter night to go owling with her father in the woods. Through crunchy snow they trudge, careful not to make any unnecessary sounds, until they reach a clearing in the forest. After owl calls by her father, they are finally rewarded when an owl returns the call and comes to rest on a branch just above them. The illustrations make you feel as if you are walking in the woods along with the characters. One reader said "...you almost want to pull on your mittens before reading the book." This short tale fosters feelings of awe and respect for the simple wonders of nature.



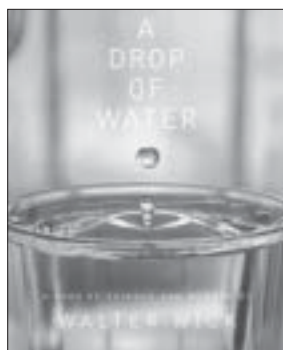
When the Monkeys Came Back by Kristine Franklin

Set in Costa Rica, this is a heart-warming story of a woman's life-long struggle to bring howler monkeys, recently extirpated due to forest destruction, back to an area where they once thrived. Following a fifty-six year absence and years of hard work to re-establish the forest, the monkeys are heard once again.



Dr. Art's Guide to Planet Earth by Art Sussman, Ph.D.

Dr. Art's Guide takes the complex workings of Planet Earth and boils them down to three simple concepts: matter cycles, energy flows and life webs. Using these three simple concepts, Dr. Art explains several current global environmental issues and then encourages local action as a way that students can make a difference. A website (www.planetguide.org) is available to support each chapter of the book with on-line activities, demonstrations, data and links to other information.



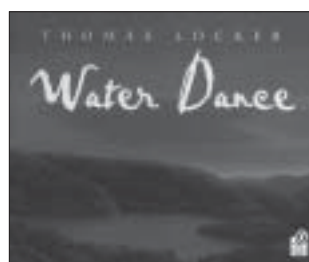
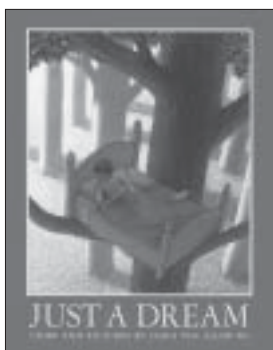
A Drop of Water: A Book of Science and Wonder by Walter Wick

Intrigued by old science books of the past, Walter Wick set out to recreate and photograph simple science experiments involving water. The result is this magnificent book that blurs the line between science and art. *A Drop of Water* consists of magnificent photographs of various water science experiments that reveal the amazing states and properties of water. The book ends with directions for recreating each

experiment that Wick conducted to capture these spectacular photographs. You'll never look at your faucet the same way again.

Just a Dream by Chris Van Allsburg

What changes would you make in your lifestyle if you, like the story's young Walter, could see into the future and discover the ramifications of your actions? Walter is fortunate to travel into the future through dreams. The first shows a future world of great environmental problems, based on his actions of not caring in the present, but when he changes his ways, his second dream shows the future changes also. This book helps point out that the future is not yet written, but we are creating it every day with the choices we make.



Water Dance by Thomas Locker

"I am one thing. I am many things. *I am water.* This is my dance through our world." These simple lines end this beautifully written and illustrated first-person poem about water's journey through

the hydrologic cycle. Locker's own paintings, originally done in oil canvas and reproduced here, depict the many forms that water can take in the cycle from clouds to lake to mist to thunderhead. Scientific information about the water depicted in each painting is presented at the end of the book. This book is part of a series by the author that also includes "Cloud Dance" and "Mountain Dance."

Other Recommendations:

Where the River Begins, Thomas Locker
The Great Kapok Tree, Lynne Cherry
Follow the Water from Brook to Ocean, Arthur Duros
A River Ran Wild, Lynne Cherry

Wildlife Journal TV Show

N.H. Fish and Game's new *Wildlife Journal* can be seen on NEW HAMPSHIRE PUBLIC TELEVISION Thursdays at 9:00 pm. Tune in to find out what's going on in your own backyard. Enjoy a behind-the-scenes look at New Hampshire's wildest places, people and critters.

WILD New Hampshire Series

N.H. FISH AND GAME's WILD New Hampshire Series for teachers and non-formal educators is broadcast through the Granite State Distance Learning Network. The series originates at one site while teachers at geographically remote sites participate in discussions. Join us March 20 for a program about wildlife-borne human diseases, April 17 to learn about amphibian breeding strategies and May 15 to find out about birds and their changing habitats. All programs are from 4 to 5:30 pm. To register and for site locations e-mail Susan Adams at sadams@nhptv.org.

Project WILD Workshop

The AUDUBON SOCIETY OF NEW HAMPSHIRE will be offering a Project WILD workshop at its Silk Farm Road facility in Concord, March 18 from 3:30 to 8:30 pm. Contact Ruth Smith at (603) 224-9909 to register. Cost: \$35.00 (dinner included)

SPNH's Solar/Floodplain Tours

The SOCIETY FOR THE PROTECTION OF NEW HAMPSHIRE FORESTS offers the following free education programs to school groups at their Conservation Center in East Concord:

INTERPRETIVE TOURS of the Merrimack River floodplain are designed to introduce K-5th graders to floodplain ecology and to nature and natural history in general. Trained volunteers conduct the tours to suit various interests and age levels. Content includes "what is a floodplain, who lives here, what grows here, river ecology, glacial and historical information of the area."

SOLAR TOURS of the Forest Society's passive solar Conservation Center. The material is best suited for older students, junior high through high school, and adult audiences.

Tours are 1 to 1.5 hours in length. Reservations are required at least two weeks in advance. For more information, call Trish Churchill at (603) 224-9945 or e-mail tchurchill@spnhf.org.

Environmental Education Course Offered On-line

A new on-line course, "Fundamentals of Environmental Education," will be available to educators in February of 2003. The course will be offered via the Internet for two undergraduate or graduate level credits by the UNIVERSITY OF WISCONSIN STEVENS POINT. It starts February 17th and runs for eight weeks. All registrants, regardless of their location, are eligible for in-state tuition. In addition, an even lower cost, non-credit workshop option is available. According to Professor Rick Wilke, one of the course developers, the course should be valuable to current teachers, those training to be teachers and those who work with teachers in settings like nature centers and museums.

For more information about the course or enrollment information, please log onto www.eetap.org/eecourse or contact Rick Wilke at rwilke@uwsp.edu or (715)-346-4766.

Seacoast Area Fourth Graders Invited to Water Festival

The N.H. DRINKING WATER WEEK COALITION will be holding its 11th Annual Drinking Water Week Festival at the Stratham Fairgrounds on Wednesday, May 7, 2003. Local fourth grade classes are invited to attend at no cost. The festival includes a theatre performance, hands-on water activities, and exhibits by various groups about groundwater, drinking water, water conservation and more! For more information, contact Nicole Clegg at (603) 271-4071 or nclegg@des.state.nh.us.

Study Literature and the Land Through the Leopold Education Project

The LEOPOLD EDUCATION PROJECT (LEP) is an interdisciplinary conservation and environmental education curriculum based on the classic writings of the renowned conservationist, Aldo Leopold. LEP teaches about humanity's ties to the natural environment in the effort to conserve and protect the earth's natural resources through Leopold's writings, which are both sound science and excellent literature. The LEP curriculum deals with Part I of *A Sand County Almanac*, which records observations and events throughout the seasons. In 21 essays, it chronologically guides the reader through the months of the year and describes Leopold's activities at his Wisconsin farm. Materials available to support LEP include *Lessons in a Land Ethic* (the teacher's guide/workbook), *A Sand County Almanac* by Aldo Leopold, *A Prophet for All Seasons* video, and the LEP task cards. For more information, visit the LEP website at www.lep.org.

Center for Children's Environmental Literature

Headquartered at the CENTER FOR ENVIRONMENTAL EDUCATION (CEE) at ANTIOCH NEW ENGLAND INSTITUTE in Keene, the CENTER FOR CHILDREN'S ENVIRONMENTAL LITERATURE (CCEL) offers resources including *Nature's Course*, a newsletter that reviews children's books with environmental themes. A CCEL goal is to enable children's book authors and illustrators to connect with scientists to produce credible and up-to-date environmental books. This project was founded by author/illustrator Lynne Cherry and is managed by Cindy Thomashow. For more information, visit www.naturescourse.schoolsgogreen.org.

N.H. Fish and Game Updates Website

Check out the new and improved N.H. FISH AND GAME website at www.wildlife.state.nh.us.

ON THE H.O.M.E. FRONT

A Symphony of Whales: A Literary Model for an Integrated Unit

BY MARILYN WYZGA

"From the earliest time she could remember, Glashka had heard music inside her head. During the long dark winters, blizzards sometimes lasted for days. Glashka heard the songs calling to her out of the darkness, beyond even the voice of the wind. The old ones of the village said, "That is the voice of Narna, the Whale."

(from *A Symphony of Whales*, Written by Steve Schuch, Illustrated by Peter Sylvada)

This tale was inspired by a true story. In the winter of 1984-85, nearly three thousand beluga whales were found trapped in the Senyavina Strait of Siberia, a narrow body of water across the Bering Strait from Alaska. The water was freezing rapidly in the bitter cold; in places, the sea ice was twelve feet thick. For seven weeks, the people of the Chukchi Peninsula and the crew of the icebreaker *Moskva* risked their lives to save those whales. Against all odds, they succeeded.

The whales were led to safety by classical music played aboard the *Moskva*. New Hampshire musician and storyteller Steve Schuch was inspired by the event to write "Whale Trilogy," a musical composition for solo violin and whale calls. Later, Schuch was invited to recreate the story as a children's book. This whale rescue, which has since inspired a play, artwork and a symphonic performance, has all the makings of an integrated, thematic curriculum unit.

What true tales have you heard, that could be folded into an integrated study unit? In the *Symphony of Whales* example, there are opportunities for writing, math, social studies, music and science.

Schuch demonstrates this in his ocean workshop, which weaves together science

and performance. In this thematic program, students learn about whales and their encounters with humans. They listen to the true tale of this arctic rescue, as well as a telling of an Eskimo legend. Through various activities, they simulate communication within a whale pod.

This may lead to an exploration of classical music. Schuch has found several other accounts of rescuers playing whale songs to lead trapped whales to safety. "But to my knowledge," he says, "the Chukchi rescue was the first time whales ever followed an icebreaker playing classical music." Was it Beethoven? Or Mozart? Or Tchaikovsky? The Soviet newspaper accounts don't say. While that part of the story is still untold, the question does provide a bridge to further study.

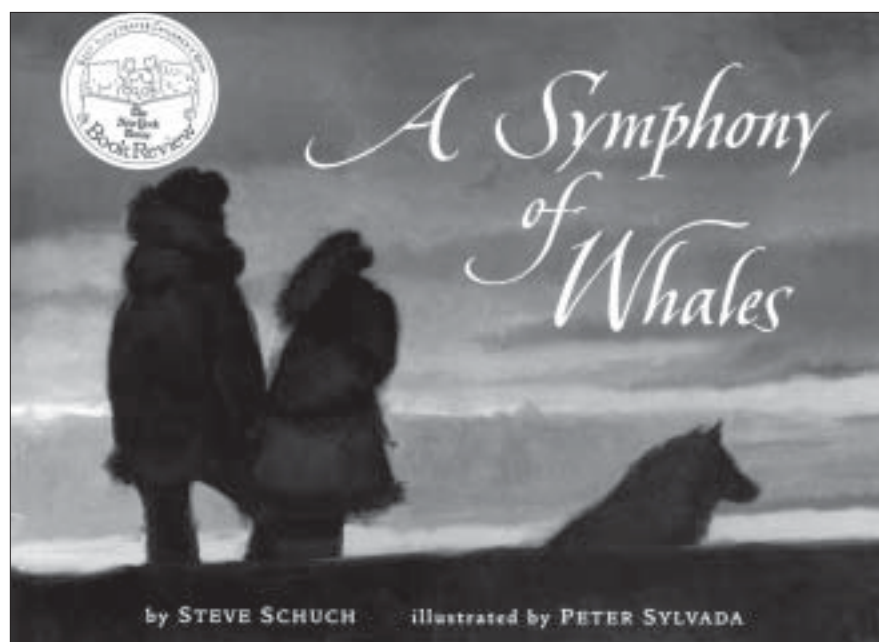
A study of whale song might emerge next. Rather than streams of random notes, whale songs – which may last as long as 30 minutes – show enormous complexity and organization. Within a song there are different themes and variations. Some whale songs even use a kind of rhyming scheme.

Current research in the "Mozart Effect" shows how listening to certain kinds of music can stimulate brain development, particularly mathematical and spatial reasoning skills. Schuch speculates whether the whales experienced their own "Mozart Effect." Perhaps music stimulated their spatial reasoning skills, as we know it does with humans, which helped them find their way back to the open ocean.

Social studies are found in this tale as well. Schuch recalls, "Although I've read accounts of this rescue in books about whales and natural history, it received little press at the time." In researching why, one finds many factors may have been at work. For starters, there was the harsh remoteness of the site. It was the dead of the Siberian winter: no airports, no hotels, no phone lines. There was also the political timing. This was the height of the Cold War, and foreign reporters rarely had access to stories that occurred in the Soviet Union.

Tales like this one are also rich sources of theater experiences. While the children's book, *A Symphony of Whales*, was being written, I was developing a theatrical adaptation with a group of young actors.

SYMPHONY continued on page 8



We listened to Schuch's "Whale Trilogy," and each child created drawings and murals based on their own interpretation of the story and music. They wrote monologues from the characters' perspectives and improvised scenes. For the performance, the actors drew on a theater game, "Machines," to physically represent the dog sled and the icebreaker *Maskva* in sound and motion. Costumes and set pieces were simple, to evoke the



This illustration by Peter Sylvada is from the pages of "A Symphony of Whales", awarded Best Illustrated Children's Book by the New York Times Book Review.

stark arctic landscape, and the music from "Whale Trilogy" was played during the performance.

Does integrated teaching have an impact? Steve Schuch would say his own career was inspired by a kind of integrated study unit. While a student at Oberlin College, studying baroque violin and biology, Schuch attended a program by Dr. Roger Payne, who did much of the pioneering research into whale songs. Payne combined slides, field recordings and his cello in the presentation, creating an evening that, as Schuch says, "forever changed how I heard music and thought about whales."

Integrated teaching around the powerful vehicle of story can take on a life of its own. Choose one of your favorite tales to use as a springboard for an integrated curriculum unit, and see where it takes you.

A Symphony of Whales, by Steve Schuch, awarded New York Times Book Review— Best Illustrated Book of the Year,

a Parents' Choice Honor Book and a Smithsonian's Notable Books for Children
ISBN 0-15-201670-8

You can read the complete Author's Interview with Steve Schuch at www.nightheron.com. For samples of the theater process, contact Marilyn Wyzga at mwyzga@wildlife.state.nh.us

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The US Fish and Wildlife Service
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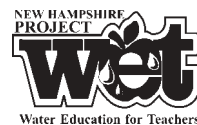
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